DOCUMENT RESUME

ED 139 998 CE 011 085

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TITLE Learning Derived by Visitors to the Ohio Historical Center.
PUB DATE 77
NOTE 30p.; Paper presented at the Adult Education Research Conference (Minneapolis, Minnesota, April 1977)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Adult Learning; *Affective Behavior; *Cognitive Processes; Exhibits; Interviews; *Learning Experience; Leisure Time; Measurement Instruments; *Museums; Observation; *Reactive Behavior; Recreational Facilities

ABSTRACT

The paper presents results of a study to assess to what extent visiting a museum is an adult learning experience. Study population was 112 adult visitors to the Ohio Historical Center in Columbus during December 1976 and January and February 1977. Visitor behavior was observed and recorded and the visitors were then interviewed for their comments about what they had seen. Visitor comments indicative of learning from the exhibits were scored on a scale of evidence of six cognitive and five affective learning behaviors. Collected data were tabulated as mean scores for the 11 behaviors and anecdotal data presented in narrative form under each behavior. A demographic profile of the 112 visitors is included. The study supported the contention that some learning occurs during a museum visit in a setting of leisure and recreation. (MF)

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LEARNING DERIVED BY VISITORS TO THE OHIO HISTORICAL CENTER

by

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1977

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The author is grateful to Anne Bostwick, Ellen Ford and Sharon Gutterman for their assistance in conducting this study.

Background

Millions of Americans visit approximately 5,000 museums in the United States each year. Collectively museums represent a rich national resource. The second hottest show in Washington in the bicentennial year, after government itself, was the National Air and Space Museum. Attendance at the NASM for the first six months had reached more than five million, nearly double the projections. (5)

Most museums are able to give relatively little attention to systematic assessment of the benefits in terms of learning derived by adult visitors. Yet it is generally recognized that museums have great potential as educative modes. Their atmosphere is casual, the pace and order is not forced. The visitor is free to linger and backtrack. Museums have a tactile, kinetic three-dimensional quality, involving more than one sense. It is rewarding to become involved with the exhibits through touching and feeling. Even a casual visit may provide reinforcement and retention of knowledge. It is nice to be able to exchange remarks about the exhibits with one's friend and even with strangers. The visitor is free from pedagogical bureaucracy, jargon and doctrine. In addition the museum's exhibits and resource materials provide opportunity for selective and uninhibited study. Guides find it difficult to lead tours. After starting out with a group they soon find themselves alone as people drift off to investigate exhibits that catch their interest. It is not generally known, however, to what extent learning in the museum does occur.

In a conference on museums and education, Frank Oppenheimer gave testimony to a museum's educational role by observing that:

> Museums manage to fill in the holes in one's experience. In school or in one's living, everything has to be fairly narrow, but in museums you can see this great variety spread out before you in some way that fits together...In a museum somehow, things that are laid out, in this great variety, can be synthesized. (7:167).

Perhaps the maximum claim for their importance as educational institutions was made at the same conference by Edgar Richardson:

> The immense story of earth through time; of the life upon earth of planets, animals, and man; the story of man's skills and imagination, of his dreaming and creative mind, are told by original evidences only in the collections of museums. It is preserved and told only by objects. (7:8).

There are, of course, museums devoted to many different purposes from the care and presentation of art to the display of toys and whaling vessels. However, all of them share the common purpose of getting the visitor to look at things and formulate ideas about them. The idea and the object are inseparable.

Statement of the Problem

The large and intriguing question addressed by this research is the extent to which museums contribute to the education of the casual unguided visitor whose purpose is, at least in part, recreational. It is largely an unanswered question in the minds of museum curators themselves. They cannot help but wonder about the impact of their work. Does the visiting public, for instance, perceive the relationships that govern the selection and placement of objects for exhibit? Are visitors attentive to aesthetic factors in the objects and structure of exhibits such as color, form and style? Do they formulate questions about exhibits to themselves or each other? Do they understand trends and developments in American history and culture? Can they explain how one exhibit is related to another? Do they judge or compare exhibits according to some personal criteria? Most importantly, do they leave the museum inspired to follow up their learning with further investigation or subsequent visits?

This study was concerned with these and other questions related to learning. Its specific purpose was to assess the learning benefits derived by adult visitors to a museum, the Ohio Historical Center.

Significance of the Problem

Museum visitor research has not significantly addressed the issue of the museum as a vehicle of mass education and its impact on the general learning of the adult

visitor. An exhibit that may remain in the public view for five to ten years and be seen by as many as a million people is often designed without consideration for the learning to be derived in its interpretation by a freely moving audience with a proved attention span, according to De Borhegyi, of thirty to forty seconds per exhibit case. (3:86).

The activities of curators in the nineteenth and early twentieth centuries were limited to first, collecting, and second, identifying, classifying and cataloguing collections. With that the museum's duty to the public was thought to be fulfilled. Today, education of the public is nearly universally accepted as a third purpose. As such the museum can be compared to "a permanent storage battery of intellectual stimulation, a primary source of wonder and delight, in the way a library of original manuscripts is a permanent storage battery." (4:150). Museum curators and exhibit designers are truly educators whose work, according to Oppenheimer, "alters the way in which individuals perceive both their past and their future experiences, and they make people aware of aspects of their surroundings that they have either learned to ignore or have never been shown how to see." (11:28).

But while the technical museum's problems of collecting, preserving, mounting, lighting, display, architecture, and even demonstrating have been met and solved, as Nielsen (10:103) observes, "the visitors themselves have remained the least known, the most unpredictable, and the most difficult to study of all the aspects of museum work."

The sheer magnitude of the visitor population and museum staff's nearly complete unawareness of their impact on the general public's learning in relation to the total viewing experience lends significance to the research question.

As Screven (16:8) states, "Museum people have strong feelings that something is happening, but have difficulty defining exactly what it is, much less measuring it." He offers what is both a conviction and a lament.

> It is possible that museum visits may change "beliefs", aesthetic sensitivities, interests and perspectives. But we do not know the nature of these changes, their direction, their retention, or who is affected and how frequently. What changes take place are uncontrolled, random, and for the most part unknown. (16:8).

Without information on such questions museums can easily appear to be simply glorified warehouses, national attics, a nice place to entertain one's children or out of town visitors, or exclusive clubs for the learned.

Review of Literature

Museum visitor research began in earnest in 1928 with Robinson's systematic observations of just how much visitors to a large or small art museum try to see. What do they look at? What do they pass by? How long do they stay? He was also interested in documenting and exploring the phenomenon of "museum fatigue."

> We asked ourselves what observable changes take place in the behavior of the museum visitor in the course of his stay in the museum. Does he observe pictures more and more hastily as his visit continues? Does he skip more pictures without looking at them? Does he pass more rooms without entering them? Does he show a progressively decreasing tendency to stay a long time with some particular picture? (15:32).

His objective and clear demonstration of the existence of a "fatigue" effect in the behavior of the museum visitor led to other studies in the 1930's and 1940's.

Melton (8) found that routes followed and frequencies of stops before objects in the museum are conditioned by architecture and floor plan. Hence these factors are more important in determining which objects receive attention and the order in which they are viewed than the differential characteristics of the objects themselves.

Robinson had found that the average time spent in an art museum, the average number of pictures looked at, and the average number of rooms entered, were all increased if the visitor used a guidance pamphlet. Porter (13), therefore, experimented with the use of a leaflet which emphasized the unity of the planned sequence of exhibits in the Peabody Museum of Natural History at Yale University. He wanted to know whether the casual visitor would use the leaflet and follow the

sequence of exhibits in the order intended, how much time would be spent studying them, how often the labels would be read, and especially, whether this arrangement prevented or even delayed "museum fatigue."

Porter found the leaflets were used and that their use resulted in an increase in the total length of time spent with the exhibits, an increase in the number of exhibits examined (including exhibits not mentioned in the leaflet), and an increase in the number of labels read. Use of the leaflets minimized but did not eliminate "museum fatigue." He cautions that the manner in which the leaflet was presented to the visitor largely determined his use of it. "A feeling of friendly cooperation could be deliberately induced by explaining what the leaflet was for and by making the visitor feel at home and getting him started on his tour of the museum with a definite purpose." (13:17).

Noting the impracticalities of trailing visitors through rooms with stop-watch in hand Nielsen (10) proposed that observation by means of time lapse photography employed in the Museum of Science and Industry in Chicago would more efficiently provide valuable insights about visitor behavior. While his suggestions do not seem to have been implemented, the limitations he observed in the methodologies of earlier studies were real and further research of this type has not been common.

All of the research reviewed to this point was limited to observations of visitors' behaviors and eschewed the process of interviewing as an unreliable means for studying their behaviors. Learning as a product of the museum experience was not a consideration.

Subsequent studies abandoned observation techniques and began constructing questionnaires to study visitors' characteristics and attitudes toward the museum. This was a response to the lament frequently cited in museum literature that, "We do not know enough about our public." Arthur Niehoff's (9) surveys of seasonal variations in the characteristics of visitors to the Milwaukee Public Museum and their exhibit preferences were among the earliest.

The United States Information Agency, studied visitors' reactions to U.S. exhibits in trade fairs in Ceylon (17) and Paris (18). The inquiry was limited to questions about the exhibits' popularity in comparison with those of other countries and what viewers learned about the United States.

Irving Reiman (14) of the University of Michigan Museum shared his experiences with the survey questionnaire in an effort to help others interested in using this method to learn more about visitors' opinions and exhibit preferences.

Probably the most thorough effort to define the museum visitor has been by Cameron and Abbey at the Royal Ontario Museum in Toronto. Over a period of several years their effort has been to answer these questions:

> Who is the visitor? Where does he come from? What reason does he give for his visit? How often does he come? Is growth in attendance the result of new visitors, or "regulars" coming more often? Are visitors drawn from specific socio-economic levels? Are attendance increases the result of changes in the characteristics and distribution of the population? (2:3).

In general, surveys allow museums to compare their audience with local census data, to gauge the effects of public relations and publicity campaigns on attendance rates, and to assess specific interests of visitors. The chief criticism of such studies is that it is difficult to take action on the data after it is gathered. Measures to assess what the visitor learns are not generally included in the process, though education continues to be accepted as an important museum function. In more recent years a surfeit of visitor surveys has prompted some museum officials to call for a surcease of such efforts.

The exhibit as an effective vehicle for communication of ideas has come to occupy the attention of museum researchers concerned with education and learning. According to Parr (12) exhibit designers are becoming increasingly aware of the premise that the nature of the stimulus is related to the response. The result has been increased consciousness of the educational value as well as the esthetics of a visual presentation.

At the present time efforts to study the communications value of different methods of visual display are limited to experiments with specific exhibits. The principle issues have been extensive vs. minimal labeling; many specimens vs. a few selected pieces; color variations; and the presentation of a theme as a statement or question. De Borhegyi (3) reports on such a study at the Milwaukee Public Museum.

The literature on communications and learning in relation to exhibit design indicates that the findings are tentative and somewhat inconclusive. Experiments with conclusions about learning are limited to very specific exhibits. A major problem and frequent complaint is that results of such research are seldom published. Each institution tends to be an island unto itself.

The extent to which learning is inspired or initiated by the total experience of the museum visit continues to be a major unanswered question.

Objectives of the Study

The major purpose of this study was to assess to what extent visiting the Ohio Historical Center is a learning experience and the evidence that can be gathered for such learning. Several subquestions are subsumed within this larger one. Among adult museum visitors:

1. will evidence be more prevalent for cognitive or affective learning outcomes?
2. assuming cognitive learning has levels of sophistication, for which levels will evidence be most predominant?
3. assuming affective learning has levels of sophistication, for which levels will evidence be most predominant?
4. are levels of cognitive and affective learning related significantly to number of visits to the museum, previous education, age, or membership in the Ohio Historical Society responsible for the facility?

Procedure

I. Population and Design

The population for this study was adult visitors to the Ohio Historical Center in the months of December, 1976, January and February, 1977 who came either alone or with another adult but unaccompanied by children. Adults with children were eliminated since the museum experience can be greatly influenced by children's behavior and viewing interests.

Four observer/interviewers positioned themselves so they could see visitors descending a staircase leading to the exhibit area. Visitors can choose to begin their tour in any of the three major areas of Natural History, Archaeology and History and the two special exhibits on Photography and the Currier and Ives collection. A visitor was selected by an observer and after 20-30 minutes of unobtrusively observing and listening to the visitor's conversation, if such occurred the observer would record evident learning behaviors such as comments or questions made about exhibits, purposeful deliberate viewing, and following exhibits according to their sequential layout.

When a natural break in viewing occurred the observer/interviewer would introduce himself/herself to the visitor, briefly explain the purpose of the interruption and question him about what he had seen, using photographs of specific exhibits whenever the respondent had difficulty focusing his/her comments.

After the visitor resumed his/her tour any anecdotes or observations provided by the visitor which were indicative of learning were dictated into a battery powered pocket memo. These comments also served as the basis for scoring the visitor on a scale of evidence for six cognitive and five affective learning behaviors. (see Tables I and II, pp. 11-12, for learning behaviors and scales). The observer/interviewer then returned to the vicinity of the staircase to select the next adult or pair of adults descending the staircase. One hundred and twelve adults were

observed and interviewed. Not more than two, and usually only one, interviewers were present in the Historical Center at any one time.

II. Instrumentation

Six cognitive and five affective educational objectives appropriate to the museum setting were identified from Bloom's (1) and Krathwohl's (6) taxonomies of educational objectives. Each was rewritten and adapted to fit the museum context. For example the cognitive behavior, "Knowledge of Specifics: The recall of specific and isolable bits of information" was rewritten as "The visitor can recall specific and isolable bits of information about exhibits." In the affective domain, "Awareness: as being conscious of a situation, phenomenon, object, or state of affairs" was rewritten as: "The visitor indicates awareness or consciousness of aesthetic factors in the objects and structure of exhibits such as color, form, design, style." The degree of complexity in the learning behaviors increases from the first to the last in both cognitive and affective domains. Likewise, subsequently listed behaviors are inclusive of preceding ones so that the second implies the first, the third implies the first and second, and so on.

The instrument was field tested and two training sessions were conducted with the four observer/interviewers to develop a common understanding of the evidence appropriate for each of the eleven learning behaviors and to insure uniformity of interpretation of the rating scale.

A score of three was awarded if the visitor provided evidence of a behavior in reference to three or more exhibits or gave extensive evidence in reference to fewer exhibits. A score of two indicated some evidence of the behavior and a score of one indicated no evidence. A score of zero was given when the respondent was not asked to provide and did not volunteer any evidence for a particular behavior.

III Analysis of Data

Mean scores of evidence for cognitive and affective learning are contained in Tables I and II. Evidence for affective learning is somewhat more prevalent than for cognitive learning. Since the degree of complexity increases from the first behavior in each category to the last, one would expect to see progressively lower mean scores from the first to the last behavior and progressively lower frequencies of evidence on the upper end of the scale. This is almost literally the case for cognitive learning behaviors. In the affective realm, however, scores for behavior in the middle of the list surpass all others.

In reporting the data, visitors' comments are placed according to the most sophisticated cognitive or affective behavior they illustrate. Comments expressed in the present tense indicate learning behaviors overheard or observed in the process of viewing the exhibits prior to the interview.

COGNITIVE ONE

"The visitor can recall specific and isolable bits of information."

These comments illustrate simple recognition of events, facts, persons, artifacts, and places without any further meaning or significance being overtly assigned. The visitor(s):

--mentioned that the Southern Hopewell and Medina Indians were not as abundant up north, and that this was something new to him.

--didn't realize back in the 1850's they had this kind of bolts on guns; hadn't realized that certain Indian tribes were in certain areas of the state.

--commented on a car which he thought had been collected or fixed up or built or something by an old white-haired man that he'd known years before.

--is identifying specific things such as pewter and comparing the sizes of cupboards in the exhibit.

--said that the typewriter looks like one that she used to type on.

TABLE I.

EVIDENCE OF COGNITIVE LEARNING N=112

MEAN	FREQUENCIES * & PERCENTAGES 0	1	2	3	BEHAVIOR
					The visitor:
2.071	4 3.6	25 22.3	42 37.5	41 36.6	1. can recall specific and isolable bits of information about exhibits.
2.045	8 7.1	17 15.2	49 43.8	38 33.9	2. can assign meaning to a photo or an exhibit and recall specific information about it.
1.392	30 26.8	31 27.7	28 25.0	23 20.5	3. indicates an understanding of trends and developments in American history and culture.
1.544	16 14.3	41 36.6	33 29.5	22 19.6	4. can critique or analyze how effectively an exhibit communicates ideas.
1.473	13 11.6	49 43.8	34 30.4	16 14.3	5. can explain how one exhibit is related to another in this or other museums.
1.714	9 8.0	37 33.0	43 38.4	23 20.5	6. makes judgements about exhibits or comparisons between exhibits according to some personal criteria.

*SCALE

0. No basis on which to make a judgement.
1. Did not evidence this type of learning in response to questions.
2. Gave limited expression of this type of learning.
3. Provided a great deal of evidence for this type of learning.

TABLE II.

EVIDENCE OF AFFECTIVE LEARNING N=112

MEAN	FREQUENCIES * & PERCENTAGES 0	1	2	3	BEHAVIOR
1.679	19 17.0	29 25.9	33 29.5	31 27.7	1. The visitor indicates awareness or consciousness of aesthetic factors in the objects and structure of exhibits such as color, form, design, style.
2.009	4 3.6	31 27.7	37 33.0	40 35.7	2. The visitor indicates response or selected attention to an exhibit by spending significant time in viewing it and/or formulates questions about it and/or indicates desire to further investigate it.
2.500	0 0.0	12 10.7	32 28.6	68 60.7	3. The above behavior or response and attention is accompanied by expressions of satisfaction, pleasure, zest or enjoyment with some aspect of the exhibits.
2.098	8 7.1	16 14.3	45 40.2	43 38.4	4. The visitor ascribes worth or value to the event, thing, or phenomenon portrayed by the exhibit(s).
1.152	33 29.5	46 41.1	16 14.3	17 15.2	5. The visitor identifies ways in which he might act out (commitment) or deepen his involvement with something interpreted by an exhibit.

*SCALE

0. No basis on which to make a judgement.
1. Did not evidence this type of learning in response to questions.
2. Gave limited expression of this type of learning.
3. Provided a great deal of evidence for this type of learning.

--is commenting on the nuts and other foods that the Indians ate.

--was interested in the quilts and the tating covers for the canapies.

--is identifying animals he knows, e.g., scarlet taniger, hummingbird, and different insects.

--is commenting about the probable age of the skeletons, pointing out necklaces.

--noticed the skeletons had pretty good teeth, and one said, "Of course they were young when they died."

--is noting how well intact these bodies were and wondered how much of her father's body is still intact.

--recalled seeing spatter ware, tan furniture, Currier and Ives prints, knew that most of the furniture was 19th Century, but also remembered seeing examples of Greek revival and Victorian furniture which is what she really likes.

--recalled seeing badgers, moose and a mouse with its toe in the water and various birds in the natural history section.

--did not realize how significantly Indians featured in the history of Ohio.

--identified details about the rocks in one of the pictures, explained how fossils were evident in the rock itself.

--noted the number of wheels on the train as double that of the ordinary train.

--is explaining to her partner what she has just read--how the Currier and Ives paintings were made, how they were reproduced and sold.

--was able to remember things from the printed material. She recalled that two men were responsible for most of the paintings; that some of the paintings were painted by other people besides these two men and that is is very difficult to tell them apart.

--identified the picture of an Indian throwing a weapon. She remembered having read that after the missile was thrown part of the weapon would stay in his hand.

--said the biology exhibit helps recall things she learned in high school, for instance she read about amebas and paramecium.

--was impressed with the way that the adena hut was constructed, and how clever these people were to use the bark on the house.

--mentioned Indian tools made of stone and flint, knives; impressed with the way Indians used all the animal parts and hides.

--didn't know that the Piney Woodpecker was an Ohio bird.

--did not know so many animals were native to Ohio.

--learned that Ohio has had seven Presidents, and the difference between pools and streams in the nature exhibits.

--read about a profile technique of taking pictures and told me something about it.

COGNITIVE TWO

"The visitor can assign meaning to a photo or exhibit and recall specific facts about it."

Visitors assigned meaning to some exhibits on the basis of personal experience with the events, facts, persons, artifacts or places represented or offered an interpretation of their meaning. The visitor(s):

--noted the graves were lined with stone, that Indian burial practices showed intelligence and something that modern science can't duplicate today.

--is explaining how the horse was hitched to the buggy and how it felt to ride in the buggy.

--named different geological phases like Paleolithic and other ages. Makes him realize how young he is, and how even though he is one of millions, billions of people each person has his/her value and his/her time to do something.

--works for the telephone company and remembers pulling down some of the kinds of equipment that now are on display.

--talked about some of the tools, household and farm things he used to work with as a boy now on display here.

--enjoyed seeing the farming implements she had seen as a child; hadn't thought of them for a few years.

--is explaining how the plows were sharpened, how one had to cut the wheat in a specific way to make it all fall in the same direction.

--commenting about the stagecoach: noting how thin the padding was for the seats, commenting on the shock absorbers, questioning the stability of the ride, whether or not it was top heavy, wondering how cramped it would be to ride in something like that.

--making comments about the primitive car, noting the limited steering mechanism and the rubber wheels on the car; very interested in mechanical things, wondering how you would drive them or how they would ride.

--interested in the Morse code machine, recalling how it is part of a test that one of them had to take for something or other, and how you listen with the headphones; playing with the Morse code mechanism to test out how it works.

--commented that the farms in the Currier and Ives pictures seemed for the most part elaborate and well-to-do, whereas in his experience, growing up on a farm was less sophisticated, more simple.

--is talking about a moose that one man had shot and how it was mounted, talking about the uses of fur.

--was interested in the new exhibit in photography and pin types etc; related that to some that his grandmother has and others he had seen in homes.

--is a carpenter interested in home construction; comparing the kinds of tools that were used and the ones that he used. He was intrigued with the octagon house and thought it would be interesting to design something like this.

--related the farming implements and machinery to those used in his childhood.

--commented on some things in exhibits he had made or seen made in past years in West Virginia.

--mentioned taking a stove, similar to the one on display, out of the house, putting it in the wash shed and replacing it with a more modern one. She explained why the stove was removed.

--recalled items like stoves and bathtubs and commented on modern improvements; in the transportation section she could tell that the exhibits went from buggy to bike and so forth.

--mentioned what a good typewriter the Oliver was and in typing class she had always tried to get the use of that one. "They never made a better typewriter than the Oliver."

--recognized the heater in the bathroom as different from one that she had been familiar with in her past and she explained the make-up of it as different.

--was very familiar with the canalboats and the riverboat system and wants to compare how this relates to the system that was used in Kentucky.

--compared facial structures to try to tell the age of the skeletons; one of the skeletons may have been a dwarf; which one was older? Noted that our bodies haven't changed much.

--talked about the mounds and their construction; speculated about how the Indians were able to endure life.

--noticed in particular the exhibit of the woman grinding corn because that's probably one of the activities that he will be planning for children to take part in and he wanted to have a very clear detailed idea of how it was done.

--was testing himself, enjoying trying to remember some of what he had learned in ornithology class ten years ago and some of what he has learned more recently. He figured he identified about half of the birds in the exhibit.

--noted there is a particular kind of mine that he passes on the railroad, some samples of which are in this museum.

--was looking at the plumbing and bathroom exhibit; fascinated by how much technology has not changed.

COGNITIVE THREE

"The visitor indicates an understanding of trends and developments in American history and culture."

For this and all subsequent cognitive behaviors, visitors' average score was less than that assigned for limited expression of this type of learning. The visitor(s):

--commented on how transportation has evolved and how this was very interesting to her.

--was interested in the way transportation has changed, what it was like then and now; she commented on what the speed limit changes have been.

--likes to ponder about how people lived back in those days, and how they progressed.

--felt the cremation symbolized a tie with ancient practice and modern practice; how cremation has a negative connotation now, whereas it had been done for years, centuries and centuries.

--thinks it is a shame that they tear down these beautiful old houses with their columns and replace them with modern ticky-tack houses.

--is commenting on the difficulty of building a log cabin and heating it. Then when they saw a different fireplace further in the exhibit area they noted how heating had improved with the construction of the more advanced fireplace.

--lives near the Amish and can see a connection between the exhibits and the way the Amish live today; they noted the contrast between this and modern society.

--noted that transportation went from primitive to more complex. She used the birch bark canoes to illustrate this.

--could tell that the photography went from primitive to more advanced methods.

COGNITIVE FOUR

"The visitor can critique or analyze how effectively an exhibit communicates ideas."

Evidence for this form of learning was general. Comments repeated most frequently were those in which the visitor(s):

--noted the importance of good lighting to see the exhibits.

--said they prefer to have the print easy to read and placed at eye-level, but not on the glass.

--said the information must be accurate. He thought he noted someplace where it was not.

--said the exhibits should be attractive.

--commented that labels are very important; the older of the two men wanted to read practically everything.

--wanted exhibits to be uncluttered and not crowded together. He commented favorably about the museum on this point.

COGNITIVE FIVE

"The visitor can explain how one exhibit is related to another in this or other museums."

The comments would indicate that few of the respondents were aware of relationships between exhibits intended by the designers. The visitor(s):

--was well informed about how the exhibits were set up, arranged, and when they changed, the different effects of that change.

--related things she had seen elsewhere to this museum and vice-versa.

--commented about Franklin Roosevelt and his summer home at Camp Obello since things they'd seen there occurred at the same time as exhibits here.

--recognized groupings of exhibits such as communication and architecture.

--noted progression in the transportation exhibits, from canoes, bicycles and trains to the airplane.

--felt that you could observe a chronological order in the Communications exhibit because there were dates given as you walked through.

--likes the way the Indian exhibits are displayed in cultures from primitive to more sophisticated.

--could see an order in the exhibits from the more primitive Indians to the more advanced.

--saw an order in the museum because there is natural history and those kinds of things in one part, and now we are into more man-made objects, technology.

--said things are layed out according to their habitat, like swamp animals are in one area and forest animals in another.

--was aware of certain amount of flow within each exhibit either chronological or by theme.

--stated they have done alot of comparing and contrasting of things seen at the Smithsonian with exhibits here to see how Ohio developed in comparison with the rest of the nation.

--is a high school biology teacher who went into a long description of how the exhibits in the natural history section were relating to each other and had complimented each other and how the sections fit together.

--noticed how we went from the animals into the human existence here in Ohio.

COGNITIVE SIX

"The visitor makes judgements about exhibits or comparisons between exhibits according to some personal criteria."

Seventy one percent of the respondents gave limited or no evidence of this type of learning behavior. For another eight percent there was no basis on which to make a judgement. Examples therefore are few. The visitor(s):

--liked the natural life exhibit (natural history) the best because it pertains to today, all the rest of the exhibits are dead.

--felt it was important for the figures and animals to be life-like;preferred exhibits that were true to life such as the adena hut.

--said if she could recall something in the exhibit from her childhood and identify with it from her past experience that made it interesting for her; compared two types of stoves in the history section and showed me how one stove had the capacity for heating water in a compartment which the other one did not have. She had experience with both.

--thought the explanations of the exhibits were very good, especially for people who perhaps had never been here before and didn't have much experience in a particular area.

AFFECTIVE ONE

"The visitor indicates awareness or consciousness of aesthetic factors in the objects and structure of exhibits such as color, form, design, style."

Visitors seem to vary greatly in the degree to which they either observe or feel comfortable commenting upon aesthetic aspects of exhibits. While it is the lowest behavior in terms of sophistication the visitor seems not always able to put it into words. The visitor(s):

--recognized the difference between the copper and the lead or zinc pipes; recognized differences in the kind of wood in the doorway.

--is commenting about how the bicycle is made with wooden spokes.

--appreciates the physical aspects of the museum--the way things are presented rather than the intrinsic value of what he is seeing, the articles, the artifacts themselves.

--focused on the architectural and artistic effects of the exhibits and the building.

--were talking at some length about the colors in the Currier and Ives paintings, noting such things as mustache and goatee and color of dress. They were puzzled over whether or not the paintings were meant to have any similarity in colors where the figures are obviously wearing the same clothes.

--thinks that the layout of this exhibit is outstanding and the imitation rock and leaves are well done.

--expressed a great deal of satisfaction with the layout of this wildlife exhibit.

--concentrated particularly on the pipe exhibit, being interested in the detail and the complexity of the art work, as contrasted with the term "primitive" which we use to describe that time period.

--couldn't stress enough the reality of the exhibits. They were set up in such a way as to convey such naturalism, for example, a scar on a Hopewell Indian's hand.

--expressed delight with the naturalness in the exhibits and thought that really added to the value to the general public.

--said that one reason they liked the museum's Indian exhibits is that they are in the process of looking for Indian artifacts for decorating their home.

AFFECTIVE TWO

"The visitor indicates response or selected attention to an exhibit by spending significant time in viewing it and/or formulates questions about it and/or indicates desire to further investigate it."

Visitors often expressed special interest in exhibits through questions to one another or the interviewer. Others would intently study something in particular. The visitor(s):

--became very interested in the photographs of the towns.

--was bringing her friend back to see the Currier and Ives exhibit and the furniture division.

--were staring very intently at the case, speculating about some of the bones, were they animal's bones, what is the fire for, one answered she thought it was for cremation purposes.

--questioned where did they find pearls in those days.

--made a point of mentioning and noticing in particular the exhibits of the woman grinding corn because that's probably one of the activities that he will be planning for children to take part in and he wanted to have a very clear detailed idea of how it was done.

--was testing himself, enjoying trying to remember some of what he had learned in ornithology class ten years ago and some of what he has learned more recently. He figured he identified about half of the birds in the exhibit.

--came here specifically to see the 18th century Indian and pioneer exhibits. He was here because he had read a book called The Pioneers and he wanted to look up some specific people. He was interested in seeing if there was information here on them.

--were pointing out pictures to each other, making comments about how pretty certain pictures were and going back to look at other things in the exhibits. I could tell it evoked some sort of feeling and awe. They said they didn't know there were so many Currier and Ives pictures.

--said seeing these made him think about how hard man is on his environment, that a lot of these animals are now extinct. Expressed appreciation that they had been preserved so nicely here so that you can enjoy how they look.

AFFECTIVE THREE

"The visitor's attention to an exhibit(s) is accompanied by expressions of satisfaction, pleasure, zest or enjoyment."

The highest mean score was recorded for this behavior, indicating that the respondents derived great pleasure from the visit. The visitor(s):

--was able to related a lot of what he had seen elsewhere to the exhibits here and was enjoying himself very much.

--was just really tingling with excitement.

--compared what they had had in their family and had enjoyed to things they saw exhibited.

--has come to the museum several times because there are certain exhibits that he really enjoys.

--related a lot of what he saw to his own enjoyments such as out-of-doors and to his geographical area and to his occupation.

--are communicating information to each other and expressing things like, "Wouldn't it be nice to have this in our home?"

--enjoys museums for leisure and also a form of education.

--loves this museum. She feels that one display follows the other in a nice sequential order.

--was very proud and would recommend anyone to come here to see this; it would not be a waste of two and a half hour drive from Cleveland.

--said she really enjoyed the birds and the animals the most.

--is using adjectives like fascinating, fabulous, fantastic, and interesting in referrence to the Indian exhibits.

--said the Indian burials were the most interesting exhibits she had ever seen.

--seemed to enjoy what they were seeing and were expressing pleasure and satisfaction with the exhibits.

--were here for relaxation and entertainment. They expressed a great deal of delight and pleasure with what they saw.

--have an interest in riding horses, western lore, and artifacts of early America associated with travel by horse and by horse-drawn vehicles. So they were very interested in, and really pleased with, the exhibits on transportation.

--was looking at the plumbing and bathroom part of the house which he found fascinating because he was interested in how much technology had not changed.

--really enjoyed the geology exhibit and named different phases like Paleolithic and other ages. Makes him realize how young he is, and how even though he is one of billions of people each person has their value and their time to do something.

--was relating things in the museum to his eighth grade course in Ohio history; commented on how dry that seemed at the time with just facts and figures; and not real people. These kinds of exhibits and this way of looking at history brought so much of that alive for him now.

AFFECTIVE FOUR

"The visitor ascribes worth or value to the event thing, or phenomenon portrayed by the exhibits."

This behavior would seem to be particularly central to the purposes of museums. The visitor(s):

--compared the value of a wooden tool box verses metal, keeps them from rusting.

--speculated about mound construction and duration. In awe with how they did these things that many years ago.

--seeing these old things evoked feelings of awe and importance and worth as compared to our modern artifacts.

--was saying how well intact bodies were and said they wondered how much of her father's body is still intact.

--were able to talk about the mounds and their construction and to speculate about how the Indians were able to endure life.

--made comments on the difficulty of building a log cabin and heating it. Then when they saw a different fireplace further in the exhibit area they noted how heating had improved with the construction of the more advanced fireplace.

--could recall specific things about the Indian exhibits. For example, she was really impressed with the way that the adena hut was constructed, and how clever these people were using the bark on the house.

--interested in the furniture because he does some furniture making himself. He was impressed with the detail and the ability of those workmen to turn out such impressive pieces of work with limited tools.

AFFECTIVE FIVE

"The visitor identifies ways in which he might act out (commitment) or deepen his involvement with something interpreted by an exhibit."

How much follow-up learning is stimulated by the museum visit is generally unknown. The visitor(s):

--had an old photograph in their family album that just seemed, not identical, but some of the same buildings as those in the museum pictures were in it, and so she plans to talk with some other people in the family to find out when the picture had been taken. She said she was going to have this friend also try to look up some additional information on this one particular area in the library.

--were going to ask their grandmother if she made a coverlet like the one exhibited or whether there were patterns some place in the family.

--just couldn't wait, it was hard to detain them long enough to interview them because they were just so excited about getting home and finding out if these quilting patterns were still available.

--wanted to try to create the same thing from the museum or at least find out if someone had actually made the coverlet at one time.

--is from New York and she plans on going to see Tecumseh, an outdoor drama, the next time she comes to Ohio as a continuation of this interest in Indians.

--intends to investigate on her own, things that were not answered for her in the furniture exhibit and she said that she will often use her mother's books.

--did not know the definition of the term "sodina python" and asked me about it. I didn't know either. She jotted it down in her notebook to look it up later.

--had never seen spatter ware before and were very eager to find out where it is made. Is it in Ohio? The woman indicated that she will go to the library and do more research on the spatter ware. They said that the colors, scenes, patterns, and powdered effect of the colors on the spatter ware were very unusual and that you just don't find it anymore.

--came to the museum to the furniture and dishware display area to see if a piece of dishware they had purchased at a flea market fit into any of the old collections. They didn't find out, but their plans were to go on upstairs and see if they could find anything in the library about it.

--asked if there was a place to go to do any further reading and I mentioned the library, and they said "Oh, well we'll have to go up there and see if our print (Currier and Ives) is mentioned," as far as when he did it and what is the motivating force behind it.

RESPONDENTS

While this was not a study of attendance rates or museum utilization, the data in Figure I indicate that visitors to the Ohio Historical Center are heterogeneous in age, educational background, and occupation. This indicates a trend away from predominant attendance by those with more education and higher occupational status indicated by visitor surveys in the 1950's. There were no significant correlations between cognitive and affective learning and the independent variables of age, education and number of visits.

Furthermore, while the sampling process was not strictly random due to limitations of resources, an attempt to increase representativeness was made by distributing interviews over every day of the week in the morning and afternoon.

Visitor behaviors were observed for clues to learning. One can observe people reading, examining an exhibit and then returning to read labels and explanatory material again, touching and feeling objects that are accessible, going directly to a specific exhibit and studying it intently, exchanging remarks with a companion, questioning one another, and speculating on possible alternative answers to questions prompted by the viewing experience. Visiting a museum seems to be an experience one does more often with another person. Learning is probably enhanced by the intellectual discourse stimulated by exhibits. Examples of behavior observed were: The visitor(s)

--had come with specific things that they had hoped to see from what other people had told them.

--were reading and commenting to each other on the process of blowing glass.

--are commenting on things, going back to different things, pointing.

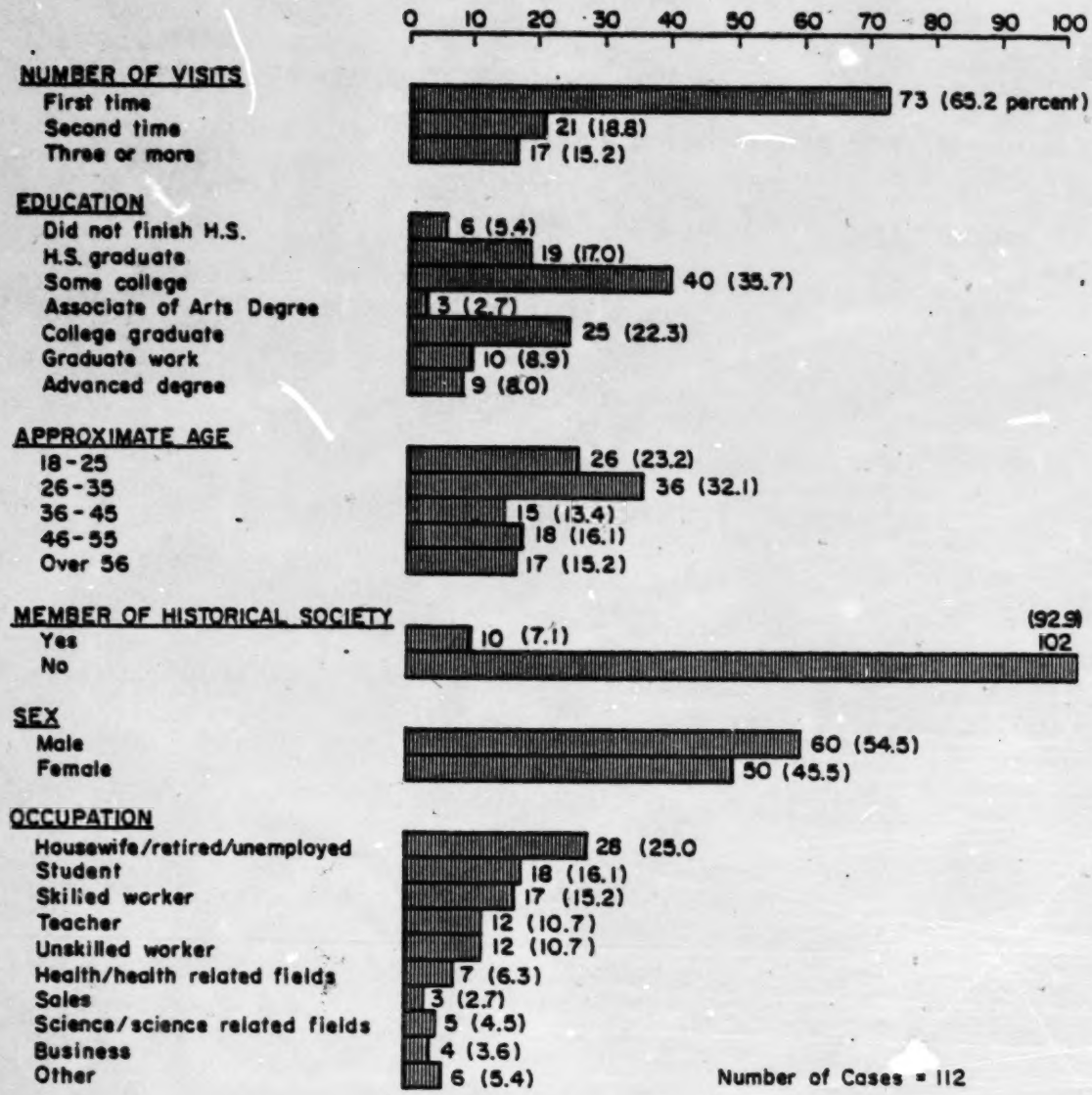
--is reading the information in front of the old car, reading out loud to the woman. They read very intently, scrutinize.

--was reading out loud about the human migration patterns.

--was reading and taking her time over the various exhibits, going in sequence at her own speed, fairly slow, stopped, slowed down where she was particularly interested.

Figure 1

DEMOGRAPHIC PROFILE OF VISITORS



--was spending a great deal of time over a very limited number of exhibits in the nature science section, standing for a long period of time reading and looking at the birds.

--very consciously and deliberately came to this particular natural science exhibit.

--are touching things that they can reach, examining things carefully, getting down on their hands and knees to read the material or see pictures when it's uncomfortable to do so from a standing position.

--was looking very intently at pre-historic pottery and reading; was trying to peer over and see how they rounded off the tops of the pottery.

--went straight to the printed material first, read about it and then looked very, very carefully at the burials. A guide came up with people and she stopped to listen to the guide. At one point an announcement was made and she just stood there and read, completely undisturbed.

--is commenting on seeing violets growing, notices rattle snakes, trying to identify the animals; spent a lot of time looking before moving on.

CONCLUSIONS

This study was an exploratory effort to assess the learning achieved by visitors to a museum. While the mean scores for cognitive and affective behaviors are one measure of learning, they are clearly not the most important one. The museum experience is essentially personal. Hence the anecdotal data most accurately reveal the meanings and interpretations visitors assign to the museum visit experience.

The study supports the contention that some learning occurs during a museum visit. The learning is occurring in a setting of leisure and recreation without benefit of human intervention other than that of the exhibit designer. The data also allow museum educators to understand more about the quality of visitor learning and prompt the question of what can be done to facilitate it in more sophisticated forms.

REFERENCES

1. Bloom, Benjamin S., et. al., Taxonomy of Educational Objectives. Part I. The Cognitive Domain, (New York: Longmans, 1956).

2. Cameron, Duncan F. and Abbey, D.S., "Investigating a Museum Audience," Museologist, No. 77, December, 1960, 2-7.

3. De Borhegyi, Stephen F., "Testing of Audience Reaction to Museum Exhibits," Curator, Vol. VIII, No. 1, 1965, 86-91.

4. Furstenberg, James H., "Case Studies of Three Midwestern Art Museums as They Function as Adult Education Institutions, With An Introductory History of Adult Education in American Art Museums," Ph.D. dissertation, University of Wisconsin, 1969.

5. Hannifin, Jerry, "Second Hottest Show In Town," Time, January, 1977, 24-25.

6. Krathwohl, David R., et. al., A Taxonomy of Educational Objectives. Part II. The Affective Domain, (New York: McKay, 1964).

7. Larrabee, Eric. Museums and Education. Smithsonian Institution, Washington, D.C., September, 1967 ED014814.

8. Melton, A.W., "Some Behavioral Characteristics of Museum Visitors," Psychological Bulletin, Vol. 30, 1933, 72-721.

9. Niehoff, Arthur, "Characterisitcs of the Audience Reaction in the Milwaukee Public Museum," Midwest Museums Quarterly, Vol. 13, No. 1, 1953, 19-24.

10. Niedson, L.C., "A Technique for Studying the Behavior of Museum Visitors," Journal of Educational Psychology, Vol. 37, 1946, 103-110.

11. Oppenheimer, Frank, "The Exploratorium: A Playful Museum Combines Perception and Art in Science Education," Outlook, Vol. 13, Winter, 1975, 25-31.

12. Parr, A.E., "Some Basic Problems of Visual Education by Means of Exhibits," Curator, Vol. 5, No. 1, 1962, 36-44.

13. Porter, M.C., "Behavior of the Average Visitor in the Peabody Museum of Natural History," (Publications of the American Association of Museums, N.S., No. 16) Washington, D.C., 1938, 28 pp.

14. Reiman, Irving G., "Post-Mortem on a Museum Questionnaire," Museologist, No. 63, June, 1957, 1-6.

15. Robinson, Edward S., The Behavior of the Museum Visitor, (Publications of the American Association of Museums, N.S., No. 5) Washington, D.C., 1928, 72 pp.

16. Screven, C.G., "The Museum as a Responsive Learning Environment," Museum News, Vol. 48, 1969, 7-10.

REFERENCES (Continued)

17. United States Information Agency, "Visitor Reaction to the U.S. Exhibit at the Ceylon Trade Fair," Survey Research Studies, Program and Media Series No. 4, May 21, 1956.

18. United States Information Agency, "Visitor Reaction to the U.S. Exhibit at the Paris Trade Fair," Survey Research Studies, Program and Media Series No. 6, July 27, 1956.